CHRONIC PROGRESSIVE HEMIPLEGIA, WITH REMARKS ON TWO CASES OF UNILATERAL PARALYSIS AGITANS WITHOUT TREMOR.[1]

By Hugh T. Patrick, M.D., Chicago.

M. K., eighteen years old, of German parentage, was first seen September 20, 1903. The family history is negative, both parents are living and well. She is the last of five children, there having been one miscarriage eleven years after her birth. The first three children died of diphtheria. The fourth child, born two years after the third, is living, three years older than my patient, and is strong but nervous. The patient was born at full term after a normal labor, walked at eleven months and talked at eighteen months, but not plainly until five years old. Excepting the ordinary diseases of childhood, from which she made perfect recoveries, she was well, strong and active until the age of thirteen or fourteen. Both the patient and her mother are emphatic in their statement that she had perfect use of all extremities until the beginning of the present trouble. She has never had convulsions, has developed mentally in a normal way, was bright as a school child, a rapid writer, and acquired unusual skill at fancy work. Menstruation began at eleven years, has always been regular and also painless until about a year and a half ago, when she had been working very hard. Since then there has been some but not extreme dysmenorrhea. At about thirteen she began to be rather irritable, impatient and emotional, as is the elder sister, and the mother attributes the change to the influence of this sister.

Shortly before the age of fourteen years a slight clumsiness of the right foot was noticed and writing began to cause fatigue of the forearm. After a few months the limp had become very apparent, the child was no longer able to run well and disability of the hand was distinct. At the age of fourteen years and three months, six to nine months after the onset, the patient left school, and she remembers that at that time she could still write well and do fancy work well, though with considerable effort. Gradually the weakness on the right side increased, but when fifteen years old she was still well enough to take a place as domestic with some acquaintances. She states that at this time she could carry a child on her right arm, and could use the right hand pretty well in washing and drying dishes, but was quite unequal to the task of buttoning her clothes or those of the children. Steadily the disability grew and although her employers were unusually considerate, she was obliged to give up the place and go home in the spring of 1902, when seventeen and a half years old. Since that time her condition seems to have changed very little except as regards some symptoms apparently functional. As before noted, dysmenorrhea appeared just before she came home, and at the same time she became more irritable and emotional.

---

[1] Read at the meeting of the American Neurological Association, May 12, 13 and 14, 1903.

Soon afterward she began to notice that often on rising the neck was swollen, but would return to normal in an hour or two. This was not a mere sensation, as the mother says it was plainly visible. Indeed, this transient swelling, apparently of the thyroid gland, continues, and for the last three or four months the right side has remained slightly enlarged. At times the face flushes smartly, and at such times she has headache. These flushes are sometimes, not always, coincident with menstruation.

During the whole course of the trouble there has been no pain whatever, no tremor, jerking or convulsions, no dizziness, tinnitus or vomiting, no affection of vision, speech or mentality, no involvement of the sphincters, and the general health has remained good.

She is at present a ruddy, well-grown, well-developed woman, five feet five inches tall, and weighs 140 pounds. Mentally she is normal. Results of examination of thoracic and abdominal viscera, blood and urine were negative. The special senses, pupillary reactions, fundi oculorum and cranial nerves reveal nothing abnormal, except paresis of the seventh and motor root of the fifth as hereinafter mentioned. Nothing in the history or examination indicates inherited or acquired syphilis.

There is an incomplete right hemiplegia, and the patient states that it seems to her that sensation is not so good on that side. She also says that sometimes the right hand and leg feel numb, especially at the menstrual time, but repeated careful examinations have shown sensation to be perfectly normal in all its qualities, including the localization of sensations, the sense of position and of motion and stereognosis.

Voluntary movements of the right facial muscles are slightly less perfect than of the left. With the face at rest the right eyebrow is a little lower than the left, and a trifle of facial asymmetry is noticed, the right side being slightly smaller than the left. On raising the brows to wrinkle the forehead horizontally the left eyebrow rises a little higher, and in showing the teeth the left corner of the mouth is retracted more than the right. The eyes are closed equally, and no excess of associated movement of the right side can be demonstrated.

The muscles supplied by the motor root of the fifth nerve show more difference. When the patient bites the teeth strongly together, masseter and temporal on the right side can readily be felt to contract less powerfully than on the left. Biting a pencil, she makes noticeably smaller indentations with the right side. Indeed, the patient asserts that on this side she can bite my finger only a little harder than I am able to endure. The pterygoids are clearly involved. Movement of the lower jaw toward the right brings the space between the canine and bicuspid teeth to the middle line, while toward the left the space between the lateral incisor and canine reaches the same point. When an effort is made to protrude the inferior maxilla straight forward beyond the upper, it deviates to the right to the extent of about three-fourths the width of the upper incisor. In opening the mouth *ad maximum* the middle point of the jaw makes a curving deviation toward the right, curving back toward the middle line on closing, but even at rest the interincisor space, or median line, of the lower jaw is slightly to the right.

The right half of the tongue seems to me slightly smaller than the left, but it is not wrinkled or flabby, lies straight in the mouth, and is protruded straight. Neck muscles show no noticeable difference, except those going to the shoulder. The right shoulder is shrugged somewhat less powerfully than the left, and all movements at the shoulder joint are weaker on the right side. The arm can be elevated to an angle of about forty-five degrees above the horizontal. Flexion and extension of the forearm on the arm show more difference, pronation and supination and movements at the wrist are weaker still, while the greatest weakness is evident in the flexors and extensors of the fingers and in the small hand muscles. Grasp of the left hand is unusually good for a woman; with the right hand the dynamometer can be held, but the index cannot be made to move. Power to pinch between the extended fingers is nil between the index and middle, scarcely perceptible between middle and ring, somewhat better between the little and ring fingers. There is some power in the thumb, so that objects can be held after a fashion between thumb and forefinger. For instance, she can still manage to do some crochet work by holding the needle in the right hand and moving the work in the left.

In walking, the right arm is not carried flexed and pronated, as is so frequent in ordinary cerebral hemiplegia. It hangs by the side, and while it doesn't "dangle" vertically, as does the arm in advanced progressive muscular atrophy or poliomyelitis of the shoulder type, the hand does swing flabbily to and fro with every step, and gives one the general impression of flaccidity. The most pronounced feature of the gait is a decided limp on the right side. The gait is neither ataxic nor spastic, nor is there very marked "steppage," but foot-drop is plain and the outer border drops more than the inner, so that in the forward swing the foot is in the equino-varus position. The patient toes distinctly neither out nor in. The right foot is raised higher than the left, it is not swung around in the arc of a circle, the toe does not catch the floor, but the heel does not come down first. Watching the patient walk one would say that the right leg was shorter, but careful measurement shows a scant one half inch difference. In the lower extremity the gradation of paresis is much as in the upper. That is, in a general way, the proximal muscles are strongest, those toward the distal end the weakest. Standing on the right leg the patient can flex the knee a little and straighten it again if she is steadied. Dorsal flexion of the foot is practically nil. With the patient recumbent the point of the foot can be moved upward not at all, but the toes can be very slightly extended. The calf muscles are good, but below normal. Standing on the right foot alone she can just manage, when steadied, to raise the heel from the floor. Inversion and eversion of the foot are impossible. Flexion of the toes is possible but feeble.

Aside from this deterioration of power toward the ends of the limbs, there is no localized paralysis; even no great preponderance in relation to physiological groups excepting as between the front and back of the leg. Flexors, extensors, rotators, adductors and abductors seem to be about equally involved.

The same applies to muscular volume. In no muscle or group of muscles is there unmistakable atrophy, but arm and leg on the right side are smaller in all their parts. The measurements in inches are: Arm, right, 10¾; left, 12; flexed, right, 12; left, 12¾; forearm, right, 9¾; left, 10¾; three inches above wrist, right, 7; left, 8; hand, right, 6¾; left, 7¾; over knuckles, right, 6¾; left, 7½; calf, right, 13⅞; left, 15⅜; foot-arch, right 8¾; left, 9⅛; foot-ball, right, 8½; left 9; thigh, six inches above patella, right, 20⅜; left, 22⅛. Trapezius, deltoid and scapular muscles are also perceptibly smaller on the right. These differences are not such as are ordinarily found in anterior horn and peripheral disease, and, considering that the patient was less than fourteen when the trouble began, it seems reasonable to attribute them, at least in part, to lack of development. This hypothesis is supported by the discrepancy in the hands around the knuckles (¾ inch) and in the feet (⅜ and ½ inch), where there is very little muscular tissue. Skiagraphs also lend support to this view as they show the bones of the right hand to be smaller than those of the left. The electric examination indicates that lack of development would hardly explain all of the difference. While there is no reaction of degeneration nor even partial reaction of degeneration, there is certainly more change than is found in the cerebral palsies of children, lateral sclerosis or multiple sclerosis;

even more than I have ever been able to detect in cerebral hemiplegia with muscular wasting—so-called cerebral atrophy. The muscles showing the greatest diminution in size are the small hand muscles, the tibialis anticus and the peronei, and in these there is quite marked quantitative change.

Despite the general appearance of flaccidity the pyramidal tract evidently bears the brunt of the lesion. All the deep reflexes are greatly exaggerated on the right side, including the scapulo-humeral and McCarthy's reflexes. It is even easy to demonstrate that the right masseter jerk is greater than the left, and a short-lived supinator clonus is easily elicited. There is only an indication of ankle clonus, but Babinski's extensor response is typical, and may be obtained by pinching the leg as high as the middle of the calf. All reflexes on the left side are normal. Contractures are absent, with the exception of some slight shortening of the calf muscles. The foot may easily be brought to a right angle with the leg, but to get it much beyond this requires considerable force, and even strenuous pushing will not dorsally flex it to the extent that can easily be accomplished on the normal side. None of the excess of associated movement, so generally present in the cerebral palsies of childhood, can be found.

There is no trace of incoordination or tremor of any kind; no fibrillary twitching, no nystagmus, no speech defect, no dysphagia. Phonation is normal, and laryngoscopic examination shows normal movements of the vocal cords. As before stated, sensation is normal.

The apparent flaccidity, as shown by the dangling arm, footdrop and moderate steppage, and the presence of real spasticity as shown by great exaggeration of the reflexes and Babinski's sign, present a very peculiar clinical picture. The case is entirely unique in my experience and an inconsiderable search of the literature has disclosed nothing just like it. Progressive muscular atrophy, amyotrophic lateral sclerosis, syringomyelia, multiple sclerosis, muscular dystrophy, neuritis, spinal tumor and hysteria may easily be excluded. It is difficult to imagine any gross cerebral lesion which could cause all the symptoms of this case and yet cause no sensory disturbance, no headache, vomiting, dizziness or optic neuritis, no more involvement of cranial nerves, no spasm, twitching, tremor or incoordination, no interference with speech and no mental deterioration. Degeneration of the upper motor neurones would seem best to explain the condition, but there is not nearly so much spasticity as in primary lateral sclerosis, and there is more diminution in muscular volume than I have seen in cases of that disease. I am unwilling to make a diagnosis. Perhaps I would better say I am unable, but I think the case more closely conforms to the clinical type proposed by Dr. Charles K. Mills than to any form of disease with which I am acquainted, and his hypothesis of pathology, "a slowly increasing degeneration of the pyramidal fasciculi or of the cerebral motor neurone system," seems to suit the symptoms of my patient.

About three years ago Dr. Mills[2] reported a case which he called unilateral progressive ascending paralysis, and which he thought probably represented a new form of degenerative disease. As he stated in that report, the patient had been sent to him by me, and when I first saw the case just described, my first thought was that I had to do with a second example of the same affection. His patient I had not seen since July, 1900, eight months after his visit to Dr. Mills. To my written request for a further examination the patient quickly responded, and on reexamination I made a diagnosis quite different from that of Dr. Mills. My only surprise is that I had not thought of it before. I believe the man to be suffering from paralysis agitans, unilateral as to distribution (the so-called hemiplegic form), and without tremor. I believe this to be correct because all the symptoms except an attack of something like herpes can be explained by this diagnosis, and because I have now under observation another case almost exactly like it, in which the tremor is beginning to develop. Briefly, the case is as follows, my description agreeing essentially with that of Dr. Mills.

At the time of his first visit to me, September 26, 1899, M. J. P. was fifty-two years old, and the trouble had begun twenty months before. His wife first noticed that his right foot occasionally caught the floor or rugs, and before long he noticed it himself and made a conscious effort to lift that foot better in order not to stumble. After about eight months he was conscious of a dull ache in the extremity, and a few months later was sure that the right leg was not only more clumsy, but was weaker than the left—at any rate it felt weaker and was more easily fatigued. Five months before coming to me (fifteen months after the inception) he became aware that he carried the right arm against the side and crooked at the elbow, and soon afterward it began to grow a little stiff and was filled with a dull, heavy ache. Why this in itself did not suggest the diagnosis to me I am unable to comprehend, because only a year and a half before I had seen a gentleman sixty years old who complained of exactly the same thing (the leg being unaffected), which case I at once recognized as paralysis agitans, *sine agitatione,* a diagnosis confirmed by the subsequent appearance of all the classical signs. With the stiffness (in the case now under consideration) came some disability in the fingers. In writing the patient grasped the pen too firmly, and in a few minutes hand and fingers would grow quite stiff and the arm would ache so that he could not continue. Buttoning clothing and other finger acts became difficult. Since that time the disability of the hand has been more prominent, at least more annoying than that of the leg. It has also been more progressive. Indeed, the patient affirms that the lower extremity is about as good now (April, 1903) as it was three years ago.

---

[2] Mills. Journal of Nervous and Mental Disease, April, 1900.

At the time of my first examination no record of measurements was made, but I noted the patient's statement that eight months previously the right thigh had been found to be one inch smaller and the calf one-half inch smaller than the left. Dr. Mills found a difference of one and one-fourth, and five-eighths respectively, and eight months later I found the differences to be one inch and five-eighths inch. The upper extremity showed no wasting. Aside from some increase in the disability of the hand, the present condition is so nearly that of three and a half years ago that the same description may serve for both, with such small exceptions as will be noted.

As regards the lower extremity, it is first to be noted that the disability is more apparent than real. To the patient there is a feeling of stiffness and clumsiness; to the observer the leg in action looks rather stiff and clumsy, but there is no spasticity, a scarcely perceptible paresis and no incoördination. On passive motion there is a little more resistance on the right side than on the left, but it is no more marked in quick or sudden movements than in slow ones—a nice distinction between the rigidity of paralysis agitans and that of pyramidal tract disease. The patient can stand on the left foot and easily pass the right over an object twenty-six inches high. He can run at fairly good speed, the only peculiarity being that he raises the right foot a little higher, and has not the same spring on that side; even hopping is well executed. He can stand on the right foot alone and let himself down until the thigh is at an angle of about forty-five degrees, and then rise so that he stands erect on the one leg, and he can stand on the right toes or on the heel. Especially the last I consider to be a severe test. Thigh measurements eight inches above the patella are eighteen and a half and nineteen and a half inches; calves, twelve and five-eighths and thirteen and one-fourth. In other words, the difference now is what it was more than four years ago.

Since the beginning, arm and hand movements have steadily but gradually progressed for the worse. The fingers are more clumsy, the arm and hand are weaker, the movements of even the larger joints less free. Putting the hand into the hip or even side pocket of his trousers is a slow matter and requires some effort. To button the collar behind is almost impossible, and buttoning it in front is no easy matter. For six months he has been unable to button on the left cuff. The shoulder muscles are all strong, perhaps fractionally weaker than on the other side; the two biceps muscles seem to be equal, the right triceps not quite so strong as the left. Pronation and supination of the forearm are equal on the two sides, as are flexion and extension at the wrist. At the time of Dr. Mills' examination the grasp of the right hand was stronger than that of the left (180—160), now the right is weaker (85—95).* Adduction and abduction of the fingers are slightly weaker on the right. As late as July, 1900, the right arm and forearm were slightly larger than the left; now the right arm is one-fourth inch smaller than the left; the forearms are equal. The same quick fatigue of the arm and aching on exertion remain. But the great discrepancy between the two hands is not in strength, but in freedom and promptness of movement—the disability characteristic of paralysis agitans. Apparently there is no movement of the fingers that cannot be executed, but no movement can be done quickly. For instance, movements of the fingers as in playing the piano can be executed with sufficient amplitude but only with extreme slowness. Smallest objects can be picked up with certainty but not quickly. This deliberateness of movement applies as well to muscles of the arm. Alternate flexion and extension at the wrist cannot be done rapidly, although as just noted, the strength is normal. The tooth brush is now used in the left hand, because with the right he cannot make the usual quickly alternating movements at the wrist. It is impossible for the patient to make a sudden movement, such as one would make in attempting to catch a fly. On command, a rectangular movement is very much slower on the right side. That is, if told to swiftly raise the hand from the knee ten or twelve inches, and then carry it ten or twelve inches horizontally one way or the other, the starting, the change of direction and the stopping take place slowly. This lack of prompt response to volition is less evident in movements at the shoulder. Last summer the patient played golf and could do so fairly well, but his swing was rather slow.

Movements of the face seem to be slightly better on the left side but the difference is so small as to be indeterminate.** The frontalis acts equally on the two sides, but after some seconds of continuous action the right side tires a little, and the eyebrow drops a trifle. Masseters, temporals and pterygoids are equal.

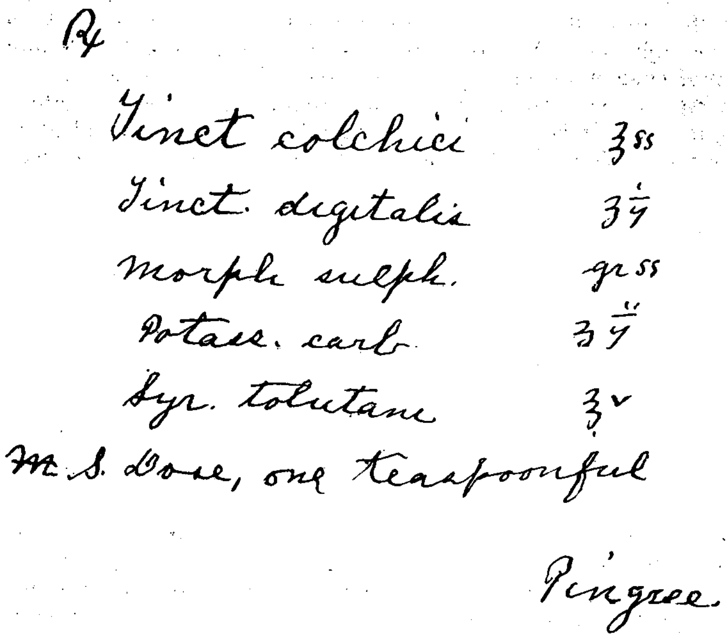
---

*My dynamometer is evidently much stiffer than that of Dr. Mills.

**Since reading this paper I have examined a case of unilateral paralysis agitans in which the facial difference was much greater than in this one.

Achilles-jerk, knee-jerk, wrist-jerk and triceps-jerk are all brisker on the right side. An evanescent trace of ankle clonus can sometimes be elicited. Dr. Mills found patellar clonus. Apparently this varies as I have been unable to get it. The jaw-jerk is absent, as is Babinski's sign.

While comparing the muscular strength of the arms I was suddenly struck by a phenomenon that seemed to present the key of the situation. On demand the patient was forcibly supinating the left fore-arm against resistance, when I noticed that the right hand had assumed the position typical of paralysis agitans, and was shaken by a rhythmic tremor like that of this disease. The motion of this tremor seemed to be largely rotatory, that is, of pronation and supination. On retesting in the same way, the tremor was not so pronounced, but the motion was more a flexion and extension of the fingers, like that so often seen in paralysis agitans. I afterward noticed that the fingers are habitually carried in the position of paralysis agitans, though without tremor. For a long time, the patient does not know just how long, exertion of the right hand or arm has caused not only an aching pain but also tremor. This has been particularly evident during and



℞

Tinct colchici ℥ss
Tinct. digitalis ʒi
Morph sulph. gr ss
Potass. carb ʒij
Syr. tolutane ℥v
M. S. Dose, one teaspoonful

Pingree.

Fig. 1. Written slowly and carefully.

after some strain, as in buttoning the collar behind. At the present time this is very easily elicited by attempts to move the fingers rapidly as in playing the piano, and this tremor, though transient, is indistinguishable from that of Parkinson's disease. When the patient lies on the back and holds the right leg in a vertical position, it soon begins to ache, and is shaken with a rhythmic tremor affecting principally the quadriceps extensor. On the left side the same maneuver causes less tremor beginning later. When the patient forcibly raises the naso-labial folds and wrinkles the nose, there is an almost rhythmic tremor or jerking on the right side, the rate being about six per second. Tremor is quite evident in writing. If he takes plenty of time his penmanship is very good, but shows tremor in numerous letters. (Figure 1). If he tries to write rapidly, tremor is so bad as to make the product almost illegible (Figure 2). For several years a very annoying symptom has been a feeling of stiffness and drawing below the right occipital region, or in the right upper neck, leading the patient to frequently rub the place and forcibly move the head about in an effort to relieve it. Eighteen months ago the palm of the right hand began to perspire in excess. It is always moist, and last summer it often dripped sweat. Elsewhere there is no excessive perspiration. Lately, the patient has noticed that the skin on the back of his right hand is smoother, does not present the distinct reticulation seen on the other hand; looks more like parchment.

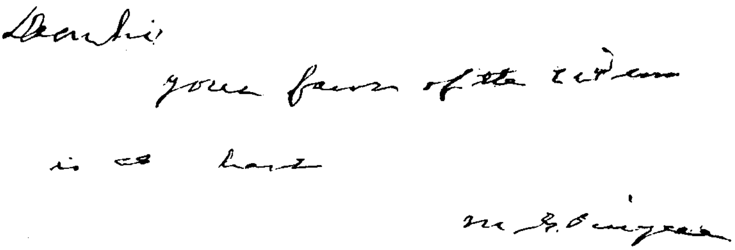


Fig. 2. Written rapidly.

Sensation, coördination, stereognosis, special senses, fundi oculorum, mentality and speech are normal. There is no fibrillary twitching, intention tremor or nystagmus. Pain, headache, dizziness, vomiting, tinnitus and paresthesia have been absent. Sphincters are good and sexual power intact. During the last year a curious sequel of intercourse has been observed. Beginning ten or fifteen seconds after the termination of coitus, the right leg becomes rigid in extension, and is seized with a rapid tremor or clonus lasting about fifteen seconds. This is unaccompanied by any pain like that of muscular cramp.

On January 18, 1903, the patient was put on 1-100 grain hyoscine hydrobromate *t.i.d.* Eight days later he reported that he was sleeping better, that the tense feeling in the neck was gone. and that the right side felt less clumsy. He could wrinkle the nose without the tremor formerly noticed, and forced supination of the left forearm, while causing the fingers of the right hand to assume the typical Parkinson position, induced no tremor Writing was easier and caused less discomfort and tremor.

For purposes of comparison I wish to report in brief the following case:

T. K., a merchant, fifty-four years old, was referred to me December 30, 1901. Except the fact of rheumatism in the mother, the family history is negative. At intervals for twenty or thirty years the patient has had lumbago. Once it lasted two or three months. Twenty-five years ago he had rheumatism in the right ankle for some days. He has been somewhat troubled with hemorrhoids, is constipated, has taken a laxative every night for four years.

A year and a half before my examination he began to have pain about the middle of the right arm whenever he put the hand into his hip pocket, sometimes on other backward movements. This lasted for ten months, from May, 1900, to March, 1901, and during part of this time the middle joint of the right index finger was swollen and tender. During the following summer, 1901, the right upper extremity became weaker—as the patient expressed it. That is, in writing the hand soon became fatigued, and in rowing the right arm and shoulder tired before the left. Like the preceding patient, he began to carry the arm semi-flexed, and it felt rather rigid and clumsy. The disability gradually increased, writing became more difficult, and caused a tired ache in the arm and shoulder. A very short time before coming to me the right knee had begun to feel slightly rigid, and for a few days he had been annoyed by the heel occasionally catching the ground. In the upper part of the neck on the right side was a distressing sensation like a drawing or pressure.

Examination revealed a state of affairs very much like that of the preceding case: On the right side a plastic rigidity, unlike that of pyramidal tract disease, like that of paralysis agitans; slowness and clumsiness of movement, no real paralysis; the right extremities slightly smaller than the left, and the deep reflexes of the right leg more active than those of the left. There was no tremor except after some physical exercise, when the whole right arm trembled. The fingers of the right hand were habitually carried in the position typical of paralysis agitans, and he presented the characteristic facies of this disease.

Since that examination his condition has changed very little, except that the leg is slightly more involved, the foot catches the ground more frequently, and he walks with a slight "hitch" on the right side. He left his business and has taken excellent care of himself. Beginning about December 1, 1902, he has noticed that the left elbow seems rather stiff and a little sore, especially when the arm has been for a long time in the same position. Strong efforts at pronation, supination, or flexion of the left arm against resistance cause an accentuation of the Parkinson attitude of the right hand and generally some tremor.

In this case there would seem to be no cause to doubt the correctness of the diagnosis, paralysis agitans. But excepting the facies, the other case, the one examined by Dr. Mills, presents almost exactly the same symptom-group: the same ache and fatigue on exercise, the same slowness and clumsiness of movement without paralysis and without ataxia, the same way of carrying the arm, the same position of the fingers, the same sort of discomfort in the suboccipital region on the affected side, the same sort of tremor induced in the same way, the increase of deep reflexes and diminution of muscular volume on the affected side. That one began in the leg and the other in the arm seems to me to be important. I agree with Dr. Mills that the attack of more severe pain and skin eruption (herpes?) of the first case does not constitute an essential feature. Unilateral distribution of paralysis agitans is the rule in the incipiency. Marked unilateral paralysis agitans without tremor is unusual, but it is far from being unrecognized in the literature. A greater difficulty in these two cases, especially in the first one, M. J. P., is the combination of diminished muscular volume and increased reflexes. After all, the former symptom is very inconsiderable in degree, and while the latter is not the rule in paralysis agitans it is not rare. In my opinion, lack of use is too often proposed to explain reduction in size of an extremity, and I am not prepared at present to assert that this will account for the difference of one inch in the thighs and five-eighths of an inch in the calves, but I do think that it is quite as reasonable to thus explain it, or to simply say that it is an unusual manifestation of paralysis agitans as it is to invoke the aid of a new and not yet understood disease. Indeed, Jolly[8] speaks of the diminution of muscular volume which ordinarily appears in the course of paralysis agitans. Besides, degeneration of the pyramidal tract alone would explain it no better. The appearance of tremor during or immediately after exertion, and in the involved but not trembling extremity on forced activity of the other side, are manifestations of paralysis agitans often noticed in incipient cases or old ones without tremor.

---

[8] Jolly: Handbuch of Ebstein and Schwalbe, Vol. IV, p. 865.

Ten months after Dr. Mills' report Dr. Spiller[4] published another case under the same title, but I am inclined to think that the disease is not the same. His case showed distinct spasticity, ankle-clonus and Babinski's sign, but was peculiar in presenting optic atrophy on the affected side. Furthermore, the patient occasionally found some difficulty in retaining the feces. Judging from his report I should say that he probably had to do with some affection different from any of the cases in this report.

To summarize, I would say that my first case apparently belongs to the clinical type indicated by Dr. Mills, but that my second case, the one reported by him, certainly affords no basis whatever for the creation of a new type, as it is an example of unilateral paralysis agitans without tremor.

---

[4] Spiller: "A Case of Unilateral, Progressive, Ascending Paralysis." Philadelphia Medical Journal, February 9, 1901.